March 1, 2001

# CONSTRUCTABILITY/BIDDABILITY REVIEW

The Department provides opportunities for the District Construction Offices to become involved in the design process. By taking advantage of this opportunity, the construction offices can make positive comments that will improve the design of the transportation facility, improve construction duration, and prevent problems during the actual construction of the project.

The Quality Control Plans for many districts require the participation of the District Construction Office in developing the scope of the project. This is a very important step in the plan development process. To prevent problems at future stages, we must make sure that the scope is complete and also that it anticipates future improvements. Many projects have had problems that resulted from changes and additions made in the middle or even near the end of the plan development process.

The traffic control conceptual plan will have a substantial impact on the project's duration. The number of phases should be minimized. Staged construction and sequence of operations should be reviewed to minimize the impact on business.

The District Construction Office conducts a constructability/biddability review to establish whether a contractor can submit a competitive bid based on what is shown in the plans and specs. At this stage, many decisions have been made that cannot be undone; but it is still an important review because it provides an opportunity to remove some of the more common problems. The constructability review should concentrate on the ability of specific details to be constructed within the requirements of the plans and specifications and to propose better details, if possible.

Other common problems are caused by plan note. Plan notes should avoid directing means and methods to a contractor. Plan notes should be clear and concise and relay important information without conflicting with plan details and specifications. Plan notes should never reiterate what is covered in the specifications.

One of the most common problems relates to pay items. There must not be any missing or incorrect pay items. There must be a clear method of payment for all items of work. Also, there should not be double pay for the same work.

The biddability review should concentrate on quantities for each item of work called for in the plans and specs. What is material used for? How much? Where does it go on the project? Are the quantities correct? reasonable? misleading? duplicated? unnecessary? contingent?

The Pre-Design Planning Form and the Plan-in-Hand Inspection Report should be included for reference.

March 1, 2001

CONSTRUCTABILITY/BIDDABILITY REVIEW

S.P. NO.:_____ ROUTE NO.:_____

F.A.P. NO.:_____ PARISH:_____

NAME:_____

| | | OK | NOT OK | COMMENTS |
|---|---|---|---|---|
| **CLEARING/GRUBBING/EXCAVATION:** | | | | |
| 1. | What are delineation of limits of grubbing, clearing and landscaping or locations for existing trees to remain? | | | |
| 2. | Are underground obstructions clearly marked? | | | |
| 3. | Are stabilization limits clearly shown? | | | |
| **SITE SURVEY PLAN/PROFILE:** | | | | |
| 1. | Are right-of-way and property line dimensions in the plan? | | | |
| 2. | Do site conditions conform to those represented in plan? | | | |
| 3. | Is existing topography accurate and up-to-date and the profile fits the terrain? | | | |
| 4. | Are work elements identified clearly and all corresponding pay items are included with adequate quantities to construct project? | | | |

| | | OK | NOT OK | COMMENTS |
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| 5. | Are plans clear and legible? Any apparent conflict between plans and specifications? | | | |
| 6. | Existing drainage patterns shown. Are existing drainage patterns changed? Yes, Why? | | | |
| 7. | Does typical section fit within existing and/or proposed right-of-way? | | | |
| 8. | Are benchmark data, needed elevations, curve data in the plan? | | | |
| 9. | Have cross-sections for grade changes at phase tie ins been checked? | | | |
| 10. | Are appropriate general notes and special provisions required for construction? | | | |
| 11. | Does the location of the grade shown on the typicals (subgrade or finished) match that shown on plan/profiles? | | | |
| **REMOVAL/DEMOLITION** | | | | |
| 1. | If buildings to be removed or renovated, asbestos survey? | | | |
| 2. | If asbestos or creosote timber being removed, are special instructions and disposal defined? Who will handle? | | | |
| 3. | Are there clear limits of removal? Horizontally and vertically? | | | |
| 4. | Is there adequate construction access for demolition? | | | |
| 5. | Is there a clear method of disposal? | | | |

| | | OK | NOT OK | COMMENTS |
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| 6. | Are there adequate provisions if signs or road markers are to be removed? | | | |
| 7. | Are there any contamination sites delineated? Utility relocation in or near these sites? | | | |
| 8. | What are depth of embedment, required excavation and inside details of removable items? | | | |
| 9. | What are depiction of valve boxes, manholes, hydrants and provisions for relocation? | | | |
| 10. | What are disassembly and adequate specified protection requirements? What are disassembly of plant, structure, utility or equipment and adequate specified protection requirements to existing utility or structure? | | | |
| **STRUCTURES:** | | | | |
| 1. | What are the pay items for preformed pile holes, pile splices, etc.? | | | |
| 2. | Does Corp. of Engineers permit require work not shown on plans? | | | |
| 3. | Are Traffic Control Plans for bridge coordinated with roadwork phasing? | | | |
| 4. | If battered pile used, will leads be over moving traffic? Will they miss R.E. walls? | | | |
| 5. | Do plans show all utilities, existing pile locations and existing foundations in temporary and permanent pile driving area? | | | |

| | | OK | NOT OK | COMMENTS |
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| 6. | Is water depth sufficient to float barges? Will barges block boat traffic? | | | |
| 7. | If access not practical by barges, have temporary work bridges or fill been considered? Is method consistent with permits? | | | |
| 8. | Have power service points for signing, lighting, signals been confirmed? | | | |
| 9. | Is highway lighting properly detailed for bridge? | | | |
| 10. | Are there any problems with R/W. | | | |
| 11. | Have Traffic Control Plans addressed channeling traffic from under overhead work? | | | |
| **UTILITIES:** | | | | |
| 1. | List of all utility owners and contact numbers. | | | |
| 2. | Is existing utility location marked in the plan? | | | |
| 3. | Are utility conflicts and their relocation indicated in design? | | | |
| 4. | Will there be disruptions of other utilities and provisions for restoration? | | | |
| 5. | Whose responsibility is it to relocate utility and provisions? | | | |
| 6. | Will utility crossings be resolved via scheduling restrictions (i.e. weekends, after hours) or temporary structures? | | | |

| | | OK | NOT OK | COMMENTS |
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| 7. | Are there overhead utilities, guy wires for potential conflict with operations and access of large equipment? | | | |
| 8. | Are there sewer lines below water mains and gas lines above other utilities? | | | |
| 9. | Is there space between R/W line and drainage structure to allow for construction? | | | |
| 10. | Are there utility conflicts with drainage? | | | |
| 11. | If project preceded by clearing contract, have utilities been relocated? | | | |
| **DRAINAGE:** | | | | |
| 1. | What are existing drainage patterns, their continuity and high water indications? | | | |
| 2. | Is there a drainage easement, if required, in the plan? | | | |
| 3. | Is there identification and adequacy of all drainage items and quantities? | | | |
| 4. | Are ditches compatible with existing and proposed drainage structures? | | | |
| 5. | Is needed elevation shown in the plan and compatibility of location of design with existing conditions? | | | |
| 6. | Is there drainage of construction area during work? | | | |
| 7. | Is there a drainage facility provided with the lanes on which traffic is to be maintained during work? | | | |

| | | OK | NOT OK | COMMENTS |
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| 8. | Is there a proposed method of connecting new and old drainage facility? | | | |
| 9. | What is the effect of overlay on intersections, gutters, curbs as regards to drainage and their adjustment? | | | |
| 10. | What are outfall locations of temporary and permanent drainage facility, if any? | | | |
| **MAINTENANCE OF TRAFFIC:** | | | | |
| 1. | Is the Traffic Control Plan clear, complete and approved? | | | |
| 2. | Is there a temporary safety devices requirement and provision (i.e. guard rail, attenuators, barrier mil, etc.)? | | | |
| 3. | Where are the location of traffic control signs, warning devices and barricades? | | | |
| 4. | Where is the detour facility, if any, and maintenance of traffic? Is traffic addressed on side streets? | | | |
| 5. | Are traffic operation requirements properly addressed (i.e. signing, pavement markings, signal, etc.)? | | | |
| 6. | Is the location of flashing arrow boards, if needed, at appropriate places? | | | |
| 7. | Are lanes on which traffic is to be maintained compatible to local conditions and intended to be paved? | | | |
| 8. | Is there sufficient clearance within the work zone for the operation (such as crane swing room)? | | | |
| 9. | Are there adequate accommodations for intersecting and crossing traffic? | | | |

| | | OK | NOT OK | COMMENTS |
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| 10. | Have pedestrian and bicycle accommodations been addressed? | | | |
| 11. | What is the method of containing bridge slopes during phased construction (at end bent) and approach grade separations? | | | |
| 12. | What are the restrictions (e.g. lane closure, general construction or peak-hour restrictions in urban areas) indicated in plan? | | | |
| 13. | There are notes covering traffic signal modifications for phased construction. | | | |
| 14. | There are notes covering pay for traffic control items. | | | |
| **SIGNALIZATION** | | | | |
| 1. | What are pole locations and their conflict with utilities and drainage structures? | | | |
| 2. | Is there a controller, signal head, pull box, pedestrian pole? | | | |
| 3. | Is there vertical conduit? | | | |
| 4. | Is there verification of conduit street crossing to become overhead? | | | |
| 5. | Is the existing controller compatible to added items? | | | |
| 6. | Are fiberglass insulators needed for span wire due to power overhead lines and adequate provisions? | | | |

| | | OK | NOT OK | COMMENTS |
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| 7. | Are there any signs attached to the overhead span wire for the traffic signal? | | | |
| 8. | What is the disposition of existing signal poles and other equipment, if they are removed? | | | |
| 9. | Are signal arms far enough to provide sidewalk access? | | | |
| 10. | Does pole imbedment conform to proper depth criteria? | | | |
| 11. | Are street name sign included on mast arms? | | | |
| **SCHEDULE/PHASING/ACCESS** | | | | |
| 1. | Has there been review of design and construction schedule for feasibility? | | | |
| 2. | Are scheduling and phasing coordinated with activity needs? | | | |
| 3. | Will there be access maintenance to all occupied spaces by reviewing scheduling restrictions, sequence of work restriction, delineated work areas? | | | |
| 4. | What type and limits of fence are to be used for limited access highways? | | | |
| 5. | Are there requirements for local/state special permits? | | | |
| 6. | Are there any walls or special access required to adjacent property? | | | |
| 7. | Is there safe pedestrian access and access to business and residences provided? | | | |

| | | OK | NOT OK | COMMENTS |
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| **NATURE & ENVIRONMENT PROTECTION** | | | | |
| 1. | Are there erosion and pollution control items/measures? | | | |
| 2. | Is there depiction of all existing trees and shrubs to remain and those to be removed? | | | |
| 3. | Are the permit requirements addressed? | | | |
| 4. | Are there provisions to prevent groundwater contamination/other environmental pollution? | | | |
| 5. | What are the project's environmental protection safeguards with respect to dust control, erosion and disposal of wastes? | | | |
| 6. | Are there provisions for noise abatement (e.g., permanent noise walls)? | | | |
| 7. | Is there verification of landscaping and planting requirements and their conflicts with utilities (e.g., irrigation lines)? | | | |
| 8. | Where additional trees are planted, is there sufficient space (25-30') for power mowers? | | | |
| 9. | Are there provisions for silt fences, turbidity barriers, etc.? | | | |
| **RECONSTRUCTIBILITY** | | | | |
| 1. | Earthwork design (e.g. "temporary" borrow, "additional excess," detour material, embankment, etc.). | | | |

| | | OK | NOT OK | COMMENTS |
|---|---|---|---|---|
| 2. | Right-of-way acquisition (e.g., for signal and lighting foundations, utility relocation, construction easements, adequate work space, desireable clear zone, etc.). | | | |
| 3. | Geometrics and roadway alignment (e.g. curve data, sight distance, vertical datum, centerline, etc.). | | | |
| 4. | Utilities (e.g. accuracy of location, proposed relocation, conflicts with other structures). | | | |
| 5. | Pavement (e.g. design criteria, flexibility to change, material alternatives, etc.). | | | |
| 6. | Drainage structures (e.g., new and standardized structures, size of pipe, interim drainage). | | | |
| 7. | Lighting and signs (e.g., conduit size, service point locations, design of structures, compatibility, power source, etc.). | | | |
| 8. | Other structures (e.g., mix design, strength, pile information, finishes, concrete and steel requirements, etc.). | | | |

List general constructibility remarks, comments and/or recommendations below:

| SHEET NO. | COMMENTS |
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March 1, 2001

The following special problems need to be resolved.

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Prepared By: _____
Title: _____
Section: _____